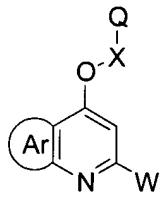
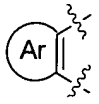
The Listing of Claims

This listing of claims will replace all prior versions and listings of claims in the application.

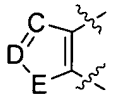
1. (Currently Amended) A compound of the formula:

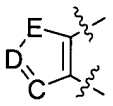


or a pharmaceutically acceptable salt thereof, wherein:



represents:



; or 

;

wherein:

C and D are CR_1, and

E represents sulfur,

where

R_1, at each occurrence, is independently selected from the group consisting of hydrogen, halogen, cyano, halo(C_{1-6})alkyl, halo(C_{1-6})alkoxy, hydroxy, C_{1-6} alkyl, amino, mono and di(C_{1-6})alkylamino, and C_{1-6} alkoxy; and

R_2 is selected from the group consisting of hydrogen, halogen, cyano, halo(C_1-C_6)alkyl, halo(C_1-

C_6)alkoxy, hydroxy, C_{1-6} alkyl, amino, and mono or di(C_1-C_6)alkylamino;

W is phenyl which is unsubstituted or substituted with 1, 2, 3, 4, or 5 R_3 groups or naphthyl which is unsubstituted or substituted with ~~one or more~~ 1, 2, 3, 4, 5, 6, or 7 R_3 groups; and

Q is pyridinyl, which is unsubstituted or substituted with ~~one or more of~~ 1, 2, 3, or 4 R_4 groups;

R_3 and R_4 at each occurrence are independently selected from the group consisting of hydrogen, halogen, hydroxy, $-OR_6$, $-NO_2$, $-CN$, $-SO_2NH_2$, $-SO_2NHR_6$, $-SO_2N(R_6)_2$, amino, $-NHR_6$, $-N(R_6)_2$, $-N(R_6)CO(R_6)$, $-N(R_6)CO_2(R_6)$, $-CONH_2$, $-CONH(R_6)$, $-CON(R_6)_2$, $-CO_2(R_6)$, $-S(R_6)$, $-SO(R_6)$, $-SO_2(R_6)$, and R_7, wherein

R_6, at each occurrence, is independently ~~selected from the group consisting of~~ C_{1-8} alkyl, ~~C_{2-8} alkenyl, C_{2-8} alkynyl, C_{3-8} cycloalkyl, C_{3-8} cycloalkenyl, and C_{5-9} cycloalkynyl, each of~~ which is unsubstituted or substituted with one or two ~~more~~ substituents independently selected from the group consisting of hydroxy, oxo, halogen, amino, and C_{1-8} alkoxy, ~~and C_{1-8} alkyl,~~

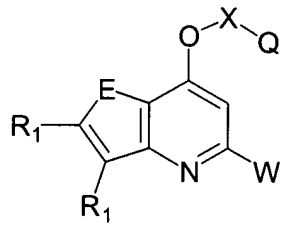
R_7 at each occurrence is independently ~~selected from the group consisting of~~ C_{1-8} alkyl, ~~C_2-C_8 alkenyl, C_2-C_8 alkynyl, C_{3-8} cycloalkyl, C_{3-8} cycloalkenyl, and C_{5-9} cycloalkynyl, each of~~

which is unsubstituted or substituted with one or two ~~more~~ substituents independently selected from the group consisting of hydroxy, oxo, halogen, $-OR_6$, ~~C_{1-6}alkyl,~~ $-NO_2$, $-CN$, $-SO_2NH_2$, $-SO_2NHR_6$, $-SO_2N(R_6)_2$, amino, $-NHR_6$, $-N(R_6)_2$, $-N(R_6)CO(R_6)$, $-N(R_6)CO_2(R_6)$, $-CONH_2$, $-CONH(R_6)$, $-CON(R_6)_2$, $-CO_2H$, $-CO_2(R_6)$, $-S(R_6)$, $-SO(R_6)$, and $-SO_2(R_6)$,

X is $-(CH_2)_n-$ or $-(CH_2)_n(C=O)-$, wherein each n is independently 1, 2, or 3.

2-8. (Cancelled)

9. (Original) A compound or salt according to claim 1 of formula:



10. (Cancelled)

11. (Currently Amended) A compound or salt according to Claim 9, wherein

W is phenyl, which is unsubstituted or substituted with from 1 to 3 substituents independently selected from halogen, hydroxy, C_{1-6}alkoxy, -nitro, -CN, $-SO_2NH_2$, $-SO_2NHR_6$, ~~$-SO_2NHR_2$,~~

$-SO_2N(C_{1-6}alkyl)_2$, amino, $-NHC_{1-6}alkyl$, $-N(C_{1-6}alkyl)_2$, $-N(C_{1-6}alkyl)CO(C_{1-6}alkyl)$, $-N(C_{1-6}alkyl)CO_2(C_{1-6}alkyl)$, $-CONH_2$, $-CONH(C_{1-6}alkyl)$, $-CON(C_{1-6}alkyl)_2$, $-CO_2(C_{1-6}alkyl)$, $-S(C_{1-6}alkyl)$, $-SO(C_{1-6}alkyl)$, $-SO_2(C_{1-6}alkyl)$, and $C_{1-6}alkyl$ optionally substituted with one or two ~~more~~ substituents independently selected from hydroxy, halogen, and amino.

12. (Original) A compound or salt according to claim 9, wherein X is CH_2.

13. (Cancelled)

14. (Cancelled)

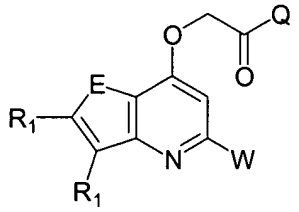
15. (Currently Amended) A compound or salt according to Claim 12; wherein

Q is pyridyl, which is unsubstituted or substituted with from 1 to 3 substituents independently selected from halogen, hydroxy, $C_{1-6}alkoxy$, -CN, amino, mono- and $di(C_{1-6})alkylamino$, and C_{1-6} alkyl which is unsubstituted or substituted with 1 or ~~more~~ two substituents independently chosen from hydroxy, oxo, amino, halogen, $C_{1-6}alkyl$, $C_{1-6}alkoxy$, and mono- and $di(C_{1-6})alkylamino$; and

W is phenyl which is unsubstituted or substituted with from 1 to 3 substituents independently selected from: halogen,

hydroxy, C_{1-6}alkoxy, -nitro, -CN, $-SO_2NH_2$, $-SO_2NHR_6$, ~~$-SO_2NHR_2$~~, $-SO_2N(C_{1-6}alkyl)_2$, amino, $-NHC_{1-6}alkyl$, $-N(C_{1-6}alkyl)_2$, $-N(C_{1-6}alkyl)CO(C_{1-6}alkyl)$, $-N(C_{1-6}alkyl)CO_2(C_{1-6}alkyl)$, $-CONH_2$, $-ONH(C_{1-6}alkyl)$, $-CON(C_{1-6}alkyl)_2$, $-CO_2(C_{1-6}alkyl)$, $-S(C_{1-6}alkyl)$, $-SO(C_{1-6}alkyl)$, $-SO_2(C_{1-6}alkyl)$, and C_{1-6}alkyl which is unsubstituted or substituted with one or two ~~more~~ substituents independently selected from hydroxy, halogen, and amino.

16. (Original) A compound or salt according to Claim 1 of formula:



17. (Cancelled)

18. (Currently Amended) A compound or salt according to Claim 16, wherein

W is phenyl which is unsubstituted or substituted with from 1 to 3 substituents independently selected from halogen, hydroxy, C_{1-6}alkoxy, -nitro, -CN, $-SO_2NH_2$, $-SO_2NHR_6$, ~~$-SO_2NHR_2$~~, $-SO_2N(C_{1-6}alkyl)_2$, amino, $-NHC_{1-6}alkyl$, $-N(C_{1-6}alkyl)_2$, $-N(C_{1-6}alkyl)CO(C_{1-6}alkyl)$, $-N(C_{1-6}alkyl)CO_2(C_{1-6}alkyl)$, $-CONH_2$,

-ONH(C_{1-6}alkyl), -CON(C_{1-6}alkyl)$_2$, -CO_2(C_{1-6}alkyl), -S(C_{1-6}alkyl), -SO(C_{1-6}alkyl), -SO_2(C_{1-6}alkyl), and C_{1-6}alkyl which is unsubstituted or substituted with one or two ~~more~~ substituents independently selected from hydroxy, halogen, and amino.

19. (Currently Amended) A compound or salt according to Claim 18, wherein:

Q is pyridyl, which is unsubstituted or substituted with from 1 to 3 substituents independently selected from: halogen, hydroxy, C_{1-6}alkoxy, -CN, amino, mono- and di(C_{1-6})alkylamino, and C_{1-6} alkyl which is unsubstituted or substituted with one or two ~~1 or more~~ substituents independently chosen from hydroxy, oxo, amino, halogen, C_{1-6}alkoxy, and mono- and di(C_{1-6})alkylamino; and

W is phenyl which is unsubstituted or substituted with from 1 to 3 substituents independently selected from halogen, hydroxy, C_{1-6}alkoxy, -nitro, -CN, -SO_2NH_2, -SO_2NHR_6, ~~-SO_2NHR_2,~~ -SO_2N(C_{1-6}alkyl)$_2$, amino, -NHC_{1-6}alkyl, -N(C_{1-6}alkyl)$_2$, -N(C_{1-6}alkyl)CO(C_{1-6}alkyl), -N(C_{1-6}alkyl)CO_2(C_{1-6}alkyl), -$CONH_2$, -CONH(C_{1-6}alkyl), -CON(C_{1-6}alkyl)$_2$, -CO_2(C_{1-6}alkyl), -S(C_{1-6}alkyl), -SO(C_{1-6}alkyl), -SO_2(C_{1-6}alkyl), and C_{1-6}alkyl which is unsubstituted or substituted with one or two ~~more~~

substituents independently selected from hydroxy, halogen, and amino.

20-26. (Cancelled)

27. (Original) A compound according to Claim 1, which is 5-(4-Fluorophenyl)- 7-[(2-pyridyl)-methyloxy]-thieno[3,2-b]pyridine.

28. (Previously Presented) A compound according to Claim 1, which is 5-Phenyl-7-[(3-pyridyl)methyloxy]-thieno[3,2-b]pyridine.

29-32 (Cancelled)

33. (Previously Presented) A compound according to Claim 1, which is
7-[(4-Pyridyl)methyloxy]-5-phenylthieno[3,2-b]pyridine.

34-52. (Cancelled)

53. (Previously Presented) A pharmaceutical composition comprising a compound or salt according to Claim 1 combined with a pharmaceutically acceptable carrier or excipient.

54-60. (Cancelled)

61. (Currently Amended) A method for the treatment of anxiety, depression, or a sleep disorder, ~~or Alzheimer's dementia~~ comprising administering a therapeutically effective amount of a compound or salt of Claim 1 to a patient in need thereof.

62. (Original) A method for demonstrating the presence of $GABA_A$ receptors in cell or tissue samples, said method comprising:

preparing a plurality of matched cell or tissue samples,

preparing at least one control sample by contacting (under conditions that permit binding of RO15-1788 to $GABA_A$ receptors within cell and tissue samples) at least one of the matched cell or tissue samples (that has not previously been contacted with any compound or salt of Claim 1) with a control solution comprising a detectably-labeled preparation of a selected compound or salt of Claim 1 at a first measured molar concentration, said control solution further comprising an unlabelled preparation of the selected compound or salt at a second measured molar concentration, which second measured concentration is greater than said first measured concentration,

preparing at least one experimental sample by contacting (under conditions that permit binding of RO15-1788 to $GABA_A$

receptors within cell and tissue samples) at least one of the matched cell or tissue samples (that has not previously been contacted with any compound or salt of Claim 1) with an experimental solution comprising the detectably-labeled preparation of the selected compound or salt at the first measured molar concentration, said experimental solution not further comprising an unlabelled preparation of any compound or salt of any one of Claims 1 at a concentration greater than or equal to said first measured concentration;

washing the at least one control sample to remove unbound selected compound or salt to produce at least one washed control sample;

washing the at least one experimental sample to remove unbound selected compound or salt to produce at least one washed experimental sample;

measuring the amount of detectable label of any remaining bound detectably-labeled selected compound or salt in the at least one washed control sample;

measuring the amount detectable label of any remaining bound detectably-labeled selected compound or salt in the at least one washed experimental sample;

comparing the amount of detectable label measured in each of the at least one washed experimental sample to the amount of detectable label measured in each of the at least one washed control sample

wherein, a comparison that indicates the detection of a greater amount of detectable label in the at least one washed experimental sample than is detected in any of the at least one washed control samples demonstrates the presence of $GABA_A$ receptors in that experimental sample.

63. (Currently Amended) The method of Claim ~~48~~ 62 in which the cell or tissue sample is a tissue section.

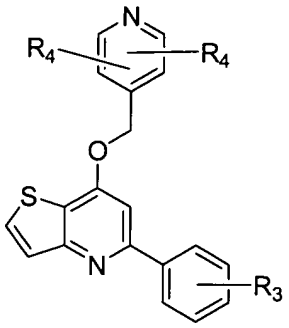
64. (Currently Amended) The method of Claim ~~48~~ 62 in which the detectable label is a radioactive label or a directly or indirectly luminescent label.

65. (Currently Amended) The method of Claim ~~48~~ 62 in which each cell or tissue sample is a tissue section, the detectable label is a radioactive label or a directly or indirectly luminescent label, and the detectable label is detected autoradiographically to generate an autoradiogram for each of the at least one samples.

66. (Currently Amended) The method of Claim ~~48~~ 62 in which each measurement of the amount of detectable label in a sample is carried out by viewing the autoradiograms and the comparison is a comparison of the exposure density of the autoradiograms.

67-82 (Cancelled)

83. (New) A compound according to claim 1 of the formula



wherein

R_3 is selected from the group consisting of $(C_1\text{-}C_6)$alkyl, $(C_1\text{-}C_6)$alkoxy, halogen, and OH; and

R_4 at each occurrence is independently selected from the group consisting of hydrogen, halogen, hydroxy, alkoxy, $-NO_2$, -CN, $-SO_2NH_2$, $-SO_2NH(C_1\text{-}C_6)$alkyl, $-SO_2N((C_1\text{-}C_6)\text{alkyl})_2$, amino, $-NH(C_1\text{-}C_6)$alkyl, $-N((C_1\text{-}C_6)\text{alkyl})_2$, $-N(R_6)CO((C_1\text{-}C_6)\text{alkyl})$, $-N((C_1\text{-}C_6)\text{alkyl})CO_2((C_1\text{-}C_6)\text{alkyl})$, $-CONH_2$, $-CONH((C_1\text{-}C_6)\text{alkyl})$, $-CON((C_1\text{-}C_6)\text{alkyl})_2$, $-CO_2((C_1\text{-}C_6)\text{alkyl})$, and $(C_1\text{-}C_6)$alkyl.

84. (New) A compound according to claim 83, wherein

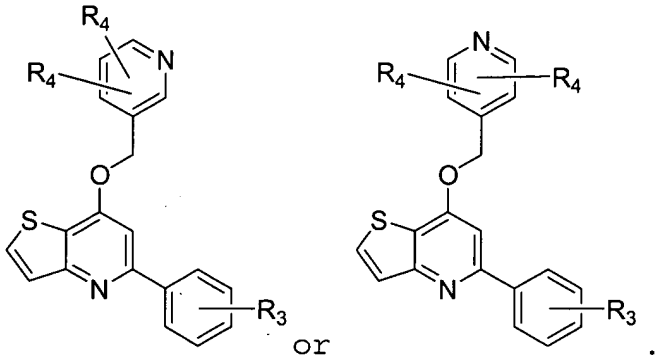
R_3 is selected from the group consisting of $(C_1\text{-}C_4)$alkyl, $(C_1\text{-}C_4)$alkoxy, halogen, and OH; and

only one of the R_4 groups is hydrogen.

85. (New) A compound according to claim 83, wherein R_3 is selected from the group consisting of (C_1-C_4)alkyl, (C_1-C_4)alkoxy, halogen, and OH; and

one of the R_4 groups is halogen.

86. (New) A compound according to claim 83, of the formula



87. (New) A compound according to claim 86, wherein R_3 is halogen.